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   In re Zurko, 59 USPQ2d 1693 (CA FC 2001)

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59 USPQ2D 1693
In re Zurko

U.S. Court of Appeals Federal Circuit

No. 96-1258
Decided August 2, 2001

Headnotes

PATENTS

[1] Patentability/Validity — Obviousness — Combining references (§115.0905)

JUDICIAL PRACTICE AND PROCEDURE

Procedure — Judicial review — Standard of review —Patents (§410.4607.09)

Decision of Board of Patent Appeals and Interferences sustaining obviousness rejection of patent application for method of improving security in computer system is reversed, even though board's factual findings underlying its determination are reviewed under "substantial evidence" standard, since prior art references relied upon by board do not teach limitation requiring communications between user and "trusted" environment along "trusted"path, and since deficiencies of references cannot be remedied by reliance upon additional combination of alternative references cited for first time on appeal, or by board's general conclusion, unsupported by evidence in record, that requiring communication with trusted environment over trusted path would be "basic knowledge" or "common sense" to person of ordinary skill in art; although board's expertise alone may provide sufficient support for conclusions as to peripheral issues, its core factual findings in patentability determinations must be supported by concrete evidence in record.

Case History and Disposition
On remand from the U.S. Supreme Court.

Patent application of Mary E. Zurko, Thomas A. Casey Jr., Morie Gasser, Judith S. Hall, Clifford E. Kahn, Andrew H. Mason, Paul D. Sawyer, Leslie R. Kendall, and Steven B. Lipner, serial no. 07/479,666 (method for improving security in a computer system). Board of Patent Appeals and Interferences sustained examiner's rejection of application under 35 U.S.C. §103. The U.S. Court of Appeals

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for the Federal Circuit reversed on appeal (42 USPQ2d 1476). On rehearing en banc, the Federal Circuit held (46 USPQ2d 1691) that proper standard of review for fact findings underlying patentability determinations by Patent and Trademark Office is "clearly erroneous" standard, rather than more deferential standard found in Administrative Procedure Act. The U.S. Supreme Court reversed the Federal Circuit's en banc decision and remanded, holding (50 USPQ2d 1930) that PTO's findings of fact must be reviewed under either "substantial evidence"or "arbitrary and capricious" APA standards of review. On remand, the Federal Circuit again reverses board's decision.

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Judge:
Before Newman, circuit judge, Archer, senior circuit judge, and Michel, circuit judge.

Opinion Text

Opinion By:
Archer, S.J.

This case is before us on remand from the Supreme Court of the United States. *Dickinson v. Zurko*, 527 U.S. 150, 50 USPQ2d 1930 (1999) (*"Zurko III"*). In *Zurko III*, the Court reversed our judgment and remanded the case because we had reviewed the factual findings of the Board of Patent Appeals and Interferences ("Board") for clear error, an incorrect standard of review.

The Board decision at issue, *Ex parte Zurko*, No. 94-3967 (Bd. Pat. Apps. & Int. Aug. 4, 1995), sustained the rejection of U.S. Patent Application No. 07/479,666 ("the '666 application") under 35 U.S.C. §103 (1994). In our initial review of this decision, we determined that the Board's findings were clearly erroneous and we reversed. *In re Zurko*, 111 F.3d 887, 42 USPQ2d 1476 (Fed. Cir. 1997) (*"Zurko I"*). At the Commissioner's suggestion, we then reheard this case en banc to reconsider the question of the appropriate standard of review. The Commissioner argued that Board findings should be reviewed under the standards of the Administrative Procedure Act (APA), namely the substantial evidence or arbitrary and capricious standard. 5 U.S.C. §706 (1994). The en banc court held, however, that clear error was the correct standard of review for Board findings of fact and adopted the conclusions of the original panel decision. *In re Zurko*, 142 F.3d 1447, 46 USPQ2d 1691 (Fed. Cir. 1998) (*"Zurko II"*).

The Commissioner then petitioned for review by the Supreme Court, and the Court reversed, holding that Board findings of fact must be reviewed under the APA standards of review. The Court did not specify which APA standard of review to apply, substantial evidence or arbitrary and capricious. We subsequently decided this question in *In re Gartside*, 203 F.3d 1305, 53 USPQ2d 1769 (Fed. Cir. 2000), and held that substantial evidence is the correct APA standard of review for Board factual findings.

We now revisit the merits of our decision in *Zurko I*, applying the proper APA standard of review. In doing so, we conclude that the outcome of this case does not change with the application of this new standard of review. Because the factual findings underlying the Board's decision are not supported by substantial evidence, we reverse.

BACKGROUND

The '666 application concerns a method for more efficiently creating a secure computer environment. Secure, or "trusted," computer environments employ trusted software designed to preclude unauthorized users and to prevent unintended or unauthorized commands. Such trusted software is often quite costly, compared to untrusted software, so it is desirable to minimize the amount of trusted software in the system. Applicants claim a method for processing trusted commands with a minimum of trusted software.

Representative claim one reads as follows:

1. A machine-executed method for executing a trusted command issued by a user on a computer system, the computer system including an untrusted computing environment and a trusted computing environment, said method comprising the steps of:

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(a) parsing the trusted command in the untrusted computing environment to generate a parsed command;
(b) submitting the parsed command to the trusted computing environment;
(c) displaying a representation of the trusted command to the user through a trusted path;
(d) receiving a signal from the user through a trusted path signifying whether the displayed representation accurately represents the user's intentions;
(e) if the signal signifies that the displayed representation does not accurately represent the user's intentions, then preventing the execution of the parsed command;
(f) if the signal signifies that the displayed representation accurately represents the users intentions, executing the parsed command in the trusted environment.

As set forth in claim one, applicants' method involves processing and verifying a trusted command using both trusted and untrusted software. A trusted command is first processed by untrusted software to create a parsed command. The parsed command is then submitted to the trusted computer environment. Execution of this command requires verification along a trusted path. The parsed command is relayed to the user along a trusted path, and, if correct, the user can send a confirming signal back along this trusted path, allowing execution of the command. By processing a trusted command in this manner, the applicants contend they reduce the amount of trusted software. The applicants assert that the parsing step generally requires a large amount of software and that performing this step with untrusted software greatly reduces the amount of trusted code required to process a trusted command.

The Board sustained the Examiner's rejection of claims 1, 4, and 5 of the '666 application under 35 U.S.C. §103 based on two prior art references. The primary reference is the UNIX operating system, as described in the applicants'information disclosure statement ("IDS"). According to this description, the UNIX system employs both untrusted and trusted code. Furthermore, certain commands in a UNIX system may be parsed in an untrusted environment, and then these parsed commands may be executed by "calling a trusted service that executes in a trusted computing environment."

The secondary reference, also described in applicants' IDS, is Dunford, FILER Version 2.20 ("FILER2"). This program repeats back potentially dangerous commands, requesting confirmation from the user before execution.

Considering the teachings of these two references, the Board concluded that the invention claimed by the '666 application would have been obvious. The Board commented that "the artisan would have been led from these teachings to take the trusted command parsed in an untrusted environment and submitted to the trusted computing environment, as taught by UNIX, and to display the parsed command to the user for confirmation prior to execution, as suggested by [FILER2]." *Ex parte Zurko*, slip op. at 6-7. According to the Board, this combination would render the claimed invention obvious.

The Board also responded to applicants' arguments that neither reference discloses a trusted path communication to the user and that no teaching of the prior art references motivates the combination of these references to create the claimed invention. The Board said that communication along a trusted path, if not explicit in the prior art, is either inherent or implicit. *Id.* at 7. The Board further adopted the Examiner's assertion that "it is basic knowledge that communication in trusted environments is performed over trusted paths." *Id.* at 8. As for the motivation to combine these references, the Board concluded that it "would have been nothing more than good common sense" to combine the teachings of these references. *Id.* The Board noted that FILER2 taught the verification of dangerous commands in general, suggesting verification of the parsed command submitted to the trusted computing environment in UNIX. Because this verification occurs within a trusted environment, it is "basic knowledge," according to the Board, that this verification would occur along a trusted path. *Id.* at 7-8.

Reviewing the Board's decision in *Zurko I*, we held that "the Board's finding that the prior art teaches, either explicitly or inherently, the step of obtaining confirmation over a trusted pathway [was] clearly erroneous." *Zurko I*, 111 F.3d at 889, 42 USPQ2d at 1478. Indeed, we noted that neither reference relied upon by the Board taught communication with

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the user over a trusted pathway. *Id.*, 42 USPQ2d at 1479. We further held that the Board clearly erred in finding that the prior art teaches communicating with the user over both a trusted and an untrusted path. This finding was in conflict with the Board's other finding that trusted communications must be over trusted paths. *Id.* at 890, 42 USPQ2d at 1479.

On remand, applicants urge that we maintain our reversal of the Board's decision, arguing that the decision is legally flawed, or, alternatively, that the Board's factual findings fail under the APA standard of review. The Commissioner reponds that we must affirm the Board decision because its findings are supported by substantial evidence in the record.

DISCUSSION

A claimed invention is unpatentable for obviousness if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. §103(a) (1994); *Graham v. John Deere Co.*, 383 U.S. 1, 14, 148 USPQ 459, 465(1966). Obviousness is a legal question based on underlying factual determinations including: (1) the scope and content of the prior art, including what that prior art teaches explicitly and inherently; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. *Graham*, 383 U.S. at 17-18, 148 USPQ at 467; *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ 1614, 1616 (Fed. Cir. 1999); *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784(Fed. Cir. 1995) (stating that the inherent teachings of a prior art reference is a question of fact). We review the ultimate legal determination of obviousness without deference. *In re Dembiczak*, 175 F.3d at 998, 50 USPQ at 1616. We review factual findings underlying this determination for substantial evidence. *In re Gartside*, 203 F.3d at 1311-16, 53 USPQ2d at 1772-75.

Substantial evidence is "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938); *see also Zurko III*, 527 U.S. at 162, 50 USPQ2d at 1772-75. A review under this standard "involves an examination of the record as a whole, taking into consideration evidence that both justifies and detracts from the agency's decision." *In re Gartside*, 203 F.3d at 1312, 53 USPQ2d at 1773 (citing *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 487-88 (1951)). In addition, "the possibility of drawing two inconsistent conclusions from the evidence does not prevent an administrative agency's finding from being supported by substantial evidence." *Consolo v. Fed. Maritime Comm'n*, 383 U.S. 607, 619-20 (1966).

The substantial evidence standard has been analogized to the review of jury findings, and it is generally considered to be more deferential than the clearly erroneous standard of review. *Zurko III*, 527 U.S. at 162-63, 50 USPQ2d at 1936. The Supreme Court noted in *Zurko III*, however, that this generally recognized difference is "a subtle one," so fine that in its review of case law in the *Zurko III* decision, the Court could not find any other case where a reviewing court had conceded that the standard of review made a difference. *Id.* Moreover, while appellate courts must respect agency expertise, the Court has "stressed the importance of not simply rubber-stamping agency fact finding." *Id.* (citing *Universal Camera*, 340 U.S. at 477-78). Indeed, the Court observed that Federal Circuit judges "will examine [Board fact] findings through the lens of patent-related experience — and properly so, for the Federal Circuit is a specialized Court." *Id.* The Court further noted that this "comparative expertise, by enabling the Circuit better to understand the basis for the [Board's] finding of fact, may play a more important role in assuring proper review than would a theoretically somewhat stricter standard." *Id.*

With this guidance from the Supreme Court in mind, we now reconsider the Board's decision. Applicants urge that we reaffirm our conclusion in *Zurko I*, alleging numerous legal and factual errors in the Board decision. These arguments center around two issues. First, applicants argue that the prior art relied upon by the Board does not disclose one of the limitations of their claimed invention, namely communication between a trusted environment and the user along a trusted path. Second, applicants claim that there is no substantial evidence support for the Board's finding of motivation to combine the cited references to yield the claimed invention. We only need to consider the first issue raised by applicants.

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[1] As to this first issue, the Commissioner apparently concedes that neither the UNIX IDS disclosure nor FILER2 teaches communications between the user and the trusted environment along a trusted path. Nevertheless, the Commissioner maintains that the Board's findings concerning the content of the prior art are supported by four other references in the record.1 The Commissioner argues that these additional references describe modified UNIX systems that allow communication over both trusted and untrusted

paths. Therefore, the Commissioner argues, the Board's general findings concerning the content of the prior art have substantial evidence support, as does its ultimate conclusion of obviousness.
We are unpersuaded by the Commissioner's arguments. The Board's conclusion of obviousness was based on the UNIX and FILER2 references. The Board's findings with respect to these references simply cannot be supported by the alternative references identified by the Commissioner on remand. To the contrary, these alternative references merely confirm the well-known fact that conventional UNIX systems do not allow communication between the user and the trusted environment along a trusted path. For example, Johrie et al., U.S. Pat. No. 4,918,653, comments that "[s]ome examples of prior art multi-user operating systems which have not provided an effective mechanism for establishing a trusted path include UNIX ...." Johrie, col. 1, II. 60-63.

The Commissioner also cannot now mend the Board's faulty conclusion of obviousness by substituting these alternative references for those relied upon by the Board. This new combination of references would constitute a new ground for rejection, not considered or relied upon by the Examiner or the Board. It is well settled that it would be inappropriate for us to consider such a new ground of rejection. *In re Margolis*, 785 F.2d 1029, 1032; 228 USPQ 940, 942(Fed. Cir. 1986); *see also Koyo Seiko Co., Ltd. v. United States*, 95 F.3d 1094, 1099 (Fed. Cir. 1996) (holding that "[t]he grounds upon which an administrative order must be judged are those upon which the record discloses that its action was based.") (quoting *SEC v. Chenery Corp.*, 318 U.S. 80, 87 (1943)).

Finally, the deficiencies of the cited references cannot be remedied by the Board's general conclusions about what is "basic knowledge" or "common sense" to one of ordinary skill in the art. As described above, the Board contended that even if the cited UNIX and FILER2 references did not disclose a trusted path, "it is basic knowledge that communication in trusted environments is performed over trusted paths" and, moreover, verifying the trusted command in UNIX over a trusted path is "nothing more than good common sense." *Ex parte Zurko*, slip op. at 8. We cannot accept these findings by the Board. This assessment of basic knowledge and common sense was not based on any evidence in the record and, therefore, lacks substantial evidence support. As an administrative tribunal, the Board clearly has expertise in the subject matter over which it exercises jurisdiction. This expertise may provide sufficient support for conclusions as to peripheral issues. With respect to core factual findings in a determination of patentability, however, the Board cannot simply reach conclusions based on its own understanding or experience — or on its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings.2 To hold otherwise would render the process of appellate review for substantial evidence on the record a meaningless exercise. *Baltimore & Ohio R.R. Co. v. Aberdeen & Rockfish R.R. Co.*, 393 U.S. 87, 91-92 (1968) (rejecting a determination of the Interstate Commerce Commission with no support in the record, noting that if the Court were to conclude otherwise "[t]he requirement for administrative decisions based on substantial evidence and reasoned findings — which alone make effective judicial review

possible —would become lost in the haze of so-called expertise"). Accordingly, we cannot accept the Board's unsupported assessment of the prior art.

CONCLUSION

The Board's conclusion of obviousness was based on a misreading of the references relied upon and, therefore, lacks substantial evidence support. Accordingly, the Board's judgment is reversed.

REVERSED.

Footnotes

1 Specifically, the Commissioner points to Johrie et al, U.S. Pat. No. 4,918,653; E.J. McCauley et al., *KSOS: The Design of a Secure Operating System*, Ford Aerospace and Communications Corp. (1979); Stanley R. Ames, Jr. et al., *Security Kernal Design and Implementation: An Introduction*, IEEE Cat. No. 830700-001 (July 1983); and Simon Wiseman et al., *The Trusted Path Between Smite and the User*, Proceedings 1988 IEEE Symposium on Security and Privacy (April 18-21, 1988).

2 As described above, we cannot accept the Commissioner's invitation to now search the record for references in support of the Board's general conclusions concerning the prior art. Even if any such references could support these conclusions, it would be inappropriate for us to consider references not relied upon by the Board. *In re Margolis*, 785 F.2d at 1032; 228 USPQ at 942.

- End of Case -

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